Banking Data Science Training Course

Professional Development Training Course Outline

Category	Banking Institute	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The Banking Data Science Training Course is designed to help banking professionals, analysts, data scientists, and technology teams harness the power of Artificial Intelligence (AI), Machine Learning (ML), Big Data Analytics, Predictive Modeling, and Financial Data Intelligence. The course equips learners with advanced skills to transform complex banking data into actionable business insights, improve customer experience, enhance risk management, and drive digital banking innovation. With the rapid adoption of FinTech, Open Banking, Generative AI, Automation, and Cloud Analytics, financial institutions require professionals who can build intelligent solutions for fraud detection, credit scoring, personalization, and regulatory compliance.

This comprehensive training program combines hands-on data science techniques, real-world banking use cases, advanced analytics frameworks, and practical implementation strategies. Participants learn how to apply Python, SQL, Data Visualization, Machine Learning Algorithms, Deep Learning, Natural Language Processing (NLP), and AI-driven decision systems to solve modern banking challenges. Through practical assignments, industry case studies, and project-based learning, learners develop the capability to create scalable, secure, and data-driven banking solutions aligned with the future of Digital Transformation and Financial Innovation.

Programme Curriculum

Banking Data Science Training Course

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Course Duration

5 days

Course Objectives

1. Develop expertise in Banking Data Science, Artificial Intelligence, and Machine Learning applications.
2. Understand modern financial analytics and data-driven decision-making frameworks.
3. Build predictive models for credit risk assessment and loan default prediction.
4. Apply AI-powered fraud detection and anomaly analytics techniques.
5. Master Python programming and SQL analytics for banking data solutions.
6. Learn advanced Customer Analytics, Segmentation, and Personalization strategies.
7. Implement Predictive Modeling and Forecasting techniques for financial services.
8. Understand Big Data Analytics and Cloud-based banking data platforms.
9. Develop skills in Natural Language Processing (NLP) for banking applications.
10. Explore Generative AI and Large Language Models (LLMs) in financial services.
11. Create interactive dashboards using Business Intelligence and Data Visualization tools.
12. Understand Responsible AI, Data Governance, and Banking Compliance Analytics.
13. Design industry-ready AI-driven banking solutions and data science projects.

Target Audience

1. Banking professionals seeking AI and Data Science skills.
2. Data analysts working in financial services and fintech organizations.
3. Data scientists interested in banking analytics applications.
4. Risk management professionals focusing on credit and fraud analytics.
5. Finance professionals exploring digital banking transformation.
6. Software engineers transitioning into Financial AI and Machine Learning roles.
7. Business intelligence professionals working with banking data.
8. FinTech entrepreneurs building AI-powered financial solutions.

Course Modules

Module 1: Introduction to Banking Data Science & Financial Analytics

- Fundamentals of Data Science in Banking and Financial Services
- Role of AI, ML, and Analytics in Digital Banking
- Banking data ecosystem and financial data sources
- Data-driven decision-making strategies
- Industry trends: FinTech, Open Banking, and Intelligent Banking

- Case Study: JPMorgan Chase AI Analytics Transformation

Module 2: Python Programming for Banking Data Analytics

- Python fundamentals for financial data processing
- Data manipulation using Pandas and NumPy
- Financial data cleaning and preparation techniques
- Automated banking reporting workflows
- Building reusable analytics solutions
- Case Study: Goldman Sachs Quantitative Analytics

Module 3: SQL, Database Management & Banking Data Engineering

- SQL querying for banking databases
- Data extraction and transformation techniques
- Banking data warehouses and data lakes
- ETL pipelines for financial analytics
- Data quality and governance practices
- Case Study: HSBC Data Platform Modernization

Module 4: Machine Learning for Credit Risk & Fraud Detection

- Supervised and unsupervised learning algorithms
- Credit scoring and default prediction models
- Fraud detection using anomaly detection
- Risk prediction using predictive analytics
- Model evaluation and optimization
- Case Study: Mastercard AI Fraud Detection Systems

Module 5: Customer Analytics & Personalized Banking Solutions

- Customer segmentation techniques
- Customer lifetime value prediction
- Recommendation systems in banking
- Churn prediction analytics
- AI-powered personalization strategies
- Case Study: Bank of America Intelligent Banking Services

Module 6: Deep Learning, NLP & Generative AI in Banking

- Neural networks for financial applications
- Natural Language Processing for banking documents
- AI chatbots and virtual banking assistants
- Generative AI use cases in finance
- Large Language Models (LLMs) for financial intelligence
- Case Study: Morgan Stanley Generative AI Assistant

Module 7: Data Visualization, Business Intelligence & Cloud Analytics

- Banking dashboards and reporting systems
- Data visualization best practices
- Power BI and analytics storytelling

- Cloud-based financial analytics platforms
- Real-time banking performance monitoring
- Case Study: Capital One Cloud Analytics Strategy

Module 8: Banking Data Science Projects & Industry Implementation

- End-to-end banking analytics project lifecycle
- Building production-ready ML models
- AI governance and ethical banking analytics
- Deployment strategies for banking applications
- Career preparation and industry portfolio development
- Case Study: AI-based loan approval prediction system

Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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